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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,527	03/12/2004	Man-Pyo Hong	587-35	8496

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EXAMINER	
YALEW, FIKREMARIAM A	
ART UNIT	PAPER NUMBER
2136	
MAIL DATE	DELIVERY MODE
12/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/799,527	HONG ET AL.	
	Examiner	Art Unit	
	Fikremariam Yalew	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-9* is/are rejected.

7)☒ Claim(s) *4-5,7-9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responding to the amendment received on 09/26/2007.

2. Claims 1-2 are canceled. Claims 3-9 are new added. Claims 3-9 are pending.

Response to Arguments

3. Applicant's arguments with respect to claims 3-9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

4. Claims 4-5, 7-9 are objected to because of the following informalities: Claims 4-5,7-9 are depend on canceled claims. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3-4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko(US Patent No 6,697,950 B1) in view of Kikuchi(US Patent No 4,843,545).

6. As per claim 3: Ko discloses a method for detecting malicious code patterns, the method comprising: determining whether the values of tokens in two sentences of

program code have the same value at the time of execution by one of: determining if both of the tokens in the two sentences are constants and the other token is a variable, and if said determination is true, further determining whether relevant token character strings are identical to each other(See Fig 2 steps 206,212, Fig 4 steps 402,408,410 and col 2 lines 37-47); b) determining if one of the tokens in the two sentences is a constant and the other token is a variable, and if said determination is true, further determining whether the relevant token character strings are identical to each other after the variable is substituted for the constant(See Fig 2 steps 206,212, Fig 4 steps 402,408,410 and col 2 lines 37-47); c) determining if both of the tokens in the two sentences are variables and have the same name and range, and if said determination if true, further determining whether there are definitions of the relevant variables in a control flow from a preceding one of the two sentences to a following one thereof and if said determination is true, detecting said malicious code pattern(See Fig 2 steps 206,212, Fig 4 steps 402,408,410 and col 2 lines 37-47,col 4 lines 37-63);

Ko doesn't explicitly teach d) determining if both of the two tokens of the two sentences are variables but do not have the same name and range, and if said determination is true, further determining whether there are definitions of the relevant variables in a control flow from a preceding one of the two sentences to a following one therefore after the relevant variables are substituted for the original variables and if said further determination is true, detecting said malicious code pattern.

However Kikuchi teaches d) determining if both of the two tokens of the two sentences are variables but do not have the same name and range, and if said

determination is true, further determining whether there are definitions of the relevant variables in a control flow from a preceding one of the two sentences to a following one therefore after the relevant variables are substituted for the original variables and if said further determination is true, detecting said malicious code pattern(See abstract and Fig 1 steps 3-6 ,Fig 5 steps 17,19 and col 3 lines 29-68).

Therefore it would have been obvious to a person having ordinary skill in the art the time the invention was made to modify the teaching method of Kikuchi within Ko method inorder to perform static analysis on macro viruses (See Ko 25-26).

7. As per claim 4: the combination of Ko and Kikuchi teach the method wherein said determining step(d) of determining whether there are definitions of the relevant variables in a control flow from a preceding one of the two sentences to a following one thereof after the relevant variables are substituted for the original variables, further comprises performing a copy propagation to substitute relevant variables for original variables(See Kikchi Fig 1 steps 4,6 and col 3 lines 28-68).

10. As per claim 7: the combination of Ko and Kikuchi teach wherein said determining step (b) of determining whether there are definitions of the relevant variables in a control flow from a preceding one of the two sentences to a following one thereof further comprises performing a constant propagation to substitute relevant variables for original variables(See Kukchi Fig 1 steps 4,6 and col 3 lines 28-68).

11. As per claim 8: the combination of Ko and Kikuchi teach the method wherein said constant propagation finds a variable or formula that will always have a specific

constant value upon execution of a program(See Kikuchi Fig 1 steps 4,6 and col 3 lines 28-68)

7. Claims 6,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko(US Patent No 6,697,950 B1) in view of Kikuchi(US Patent No 4,843,545) and further view of Scales (US Patent No 7,185,327 B2)

8. As per claim 6: the combination of Ko and Kikuchi teach claim 3 as recited above. The combination of Ko and Kikuchi does not explicitly teach the method wherein the copy propagation is performed via a data flow analysis in a created control graph to create a modified control graph (See Scales Fig 2 steps 204,206).

However Scales teaches the method wherein the copy propagation is performed via a data flow analysis in a created control graph to create a modified control graph (See Scales Fig 2 steps 204,206).

Therefore it would have been obvious to a person having ordinary skill in the art the time the invention was made to modify the teaching method of Scales within Ko and Kikuchi method inorder to perform static analysis on macro viruses (See Ko 25-26).

13. As per claim 9: the combination of Ko-Kikuchi-Scales teach the method of claim wherein the constant propagation is performed via a data flow analysis in a created control graph to create a modified control graph(See Scales Fig 2 steps 204,206,208 and col 5 lines 8-26)

8. Claims 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko(US Patent No 6,697,950 B1) in view of Kikuchi(US Patent No 4,843,545) and further view of Schmidt et al(hereinafter referred as Schmidt) US Patent No 5,937,196

9. As per claim 5: the combination of Ko and Kickuchi teach claim 4 as recited above.Ko and Kicjuchi do not explicitly teach the method wherein said copy propagation reduces the number of copies by finding a variable which will always have a specific constant value upon execution of a program and performing substitution through a copy sentence in the form of "X=Y".

However Schmidt teaches the method wherein said copy propagation reduces the number of copies by finding a variable which will always have a specific constant value upon execution of a program and performing substitution through a copy sentence in the form of "X=Y"(See Schmidt col 2 lines 24-36 and Fig 2 steps 108).

Therefore it would have been obvious to a person having ordinary skill in the art the time the invention was made to modify the teaching method of Scales within Ko and Kikuchi method inorder to perform static analysis on macro viruses (See Ko 25-26).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fikremariam Yalew whose telephone number is 5712723852. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Moazzami Nasser can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fikremariam Yalew
12/04/2007
FA

Art Unit 2136

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12/7/07